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SANITARY HOUSE FURNISHING.

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PART I.

(See Illustration on opposite page.)

JOHN WESLEY'S saying, "Cleanliness is indeed next to godliness," is a truism apparently appreciated by all. There are few housewives who would not be shocked if told that many of their surroundings are constructively unclean, *i. e.*, unhealthy. That this is a truth generally unknown, seems true, otherwise furniture and house furnishing would have received the attention due them in the general impetus given to questions of sanitation in the last few years. Healthy foundations, healthy plumbing, and healthy heating are only more important than healthy furniture, because more deleterious matter is generated in the former than can possibly accumulate on the latter.

Few people realize the dark abiding places constructed in most furniture, wherein dirt or dust from the atmosphere can and does collect. A smaller number still are aware that the floating air is composed, in addition to its constituent gases, of mineral and organic atoms and micro-organisms called *bacteria*.

It is enough to know that specific diseases are caused by specific bacteria. This has been proved and is accepted as a fact by the majority of scientists and physicians. Although the majority of bacteria are harmless, yet those which cause disease may be in the air, earth, or water, deposited by infected matter, without our knowledge.

The spores or germs of bacilli (a member of the bacterian family) may become dry, apparently dead, and remain in a quiescent state an unlimited time, neither destroyed by cold or heat between the freezing and boiling points (32° to 212° Fah.). These spores are the only bits of micro-organic life that are not destroyed by a few moments' boiling, but they may be destroyed by continued boiling for an hour or more. This germ, which it takes a strong microscope to see, may be a specific disease germ, and when deposited on one proper substance will turn into a bacillus and multiply by millions.

The substances on which they breed may be found in almost all collections of dirt, no matter how small. It behooves us to guard against all concealed openings, cracks, or crannies in our furniture where dirt can collect and the germs can multiply.

To be healthful, interiors must also be pleasing to the eyes, not irritating to both the mind and nerves, as is too often the case, but mentally restful; a sedative after the hurry and worry of every-day life.

Chairs, beds, lounges, etc., should be so designed as to be most conducive to physical ease, comfort, and rest, never so formed as to bruise the flesh, strain the muscles, make the back or limbs to ache. Children are sometimes deformed for life by improperly designed chairs and desks. After exercise the physical being requires rest, a comfortable rest, so the body may recuperate and take hold of business or pleasure with greater zest on the morrow.

Enough has been said, I think, to justify me in giving the matter attention and to show that due care should be exercised both in design and arrangement of our home interiors.

Healthful or sanitary furniture must be cleanly, beautiful, or pleasing, comfortable and restful both mentally and physically. In the following articles I propose to treat the subject somewhat in detail, descriptively and graphically, offering suggestions in design and arrangement, so that interiors may be easily cleaned and kept clean as well as comfortable and pleasing.

THE CELLAR.

As the foundation is the beginning of a house in the process of construction, so the cellar is the first to need attention in the act of furnishing. The cellar is usually considered the unfurnished apartment, but, nevertheless, it is important to have the homely heating apparatus, coal and wood bins, ash receptacles, etc., properly designed and placed. A heating apparatus is either portable or brick-set, *i. e.*, surrounded either by a metal jacket or by a brick wall. Between this covering and the fire pot or heated tubes is the space in which the air is heated and delivered to our rooms.

In the winter bacteria passing through this compartment either from the cellar or cold-air

duct, would most probably be killed by the heat. Even here there should be an abundant opportunity for cleaning out dust and mineral particles, which, in circulating in the air, tend to irritate the lungs. The apparatus should never be placed in a hole in the ground beneath the cellar floor (see sketch, fig. 2), as here dirt of all kind will collect, and it will be sufficiently moist and warm to form an excellent nest for germs.

If the cellar is not deep enough for the pattern desired, a low furnace should be selected. Prepare a concrete base, finished with portland cement and sand of equal parts, for a foundation on which to set the heating apparatus (fig. 1).

Set the furnace itself on good high legs, so the space beneath can be brushed out without difficulty. Set it well away from the wall, so there will be no inaccessible corners for vermin. The cold-air duct is best made of galvanized iron or other sheet metal and carried along eighteen inches below the ceiling on hangers to the heating apparatus with doors to inspect and clean inside and a sufficient distance from the wall and ceiling to prevent anything making it a hiding place. The cold-air duct beneath the ground is often the receptacle of sewage and the dwelling place of rats (fig. 2).

It is generally the custom now, and it is a good custom, to run the pipes along the cellar wall where they will be visible. Unfortunately the pipes are usually run directly against the ceiling or wall; this should never be the case, or the consequences shown in fig. 7 may be expected. In just such places water-bugs, roaches and their kindred love to play at hide and seek. Where the pipes are boxed, larger vermin make their homes. Dirt is carried and collected wherever animal life finds a habitat.

Pipes, whether for soil, water, or steam, should be supported on brackets projecting well from the wall (fig. 6), or on hooks suspended from the ceiling.

Coal and wood bins should not be built in the form of immovable boxes, but so the plank sides can be easily taken out one by one. The sketches (figs. 4 and 5), show a coal-bin post, formed of three iron rods joined at the top. The spaces between the rods will allow the boards or planks to be easily removed, at the same time the ends of the plank are visible and it is free from concealed grooves.

Ash cans or receptacles will be found a great comfort and convenience. When made of sheet metal (a suggestion is shown in fig. 3) with a hinged cover, ashes can be put into them as soon as removed from the furnace. Thus one handling, with its consequent dust, is saved. The can or cans when full can be put into a cart, carried away, and emptied without inconvenience to the dwellers in the house.

If the ashes must be sifted, this can be done at the dump and the screenings returned in the can. For charity's sake, I think, the cinders should be left to the poor. By use of these ash cans, the ash pile, and it might often be called the garbage pile, would be removed from the cellar.

Other matters of importance in the cellar, such as drainage, site, construction of walls, etc., cannot be treated in these articles, as they belong rather to building construction than to furnishing. Any of my readers who wish to study this branch of the subject, I refer to my little book on "Healthy Foundations" for Houses. As the kitchen is the department nearest the cellar, in the next article I will treat of that important room.

CONSERVATORIES.

THE conservatory is confessedly a delightful addenda to a city or country residence, the means of bringing about one at all seasons the beauties of vegetative and flower life of tropical, intertropical and temperate zones. In the transition they afford from the apartment or the open garden they often present a change equal to the reputed wonders of fairyland.

The city, with its pent up myriads of people and dust-laden air, is no place for flowers. The nurseryman, so far as flowers are concerned, holds year by year a more precarious footing in our great cities. Battling against deleterious influences that he can at best but feebly resist, he relies on continual outgoing for festive and ornamental purposes and a continual renewal of country stock.

Ferns and mosses and some few hardy plants, recommended by gracefulness of form or beauty of leaf, are the chief occupants of our city conservatories. The glancing foliage under the alternations of light and shade is at once grateful to the sight and gratifying to the taste. It is nature brought within the domain of constructive art.

We find our city conservatories taking the form of projections from the parlor, from which they are simply separated by sliding sashes or glass

doors, or capping the lower wings of buildings and so constituting an aerial finish to the dwelling. In some private mansions, built with conservatories as a part of the general design, the external portion is of stone or terra-cotta with pilasters or pillars, bow windows and paneled work in relief.

The most costly and most imposing conservatory in this city stands on the grounds of Mrs. Stewart's residence, and wholly varies from the generally accepted types. It is a lofty oblong structure of marble, without side lights, the entire glass being in the roof. In the light, received solely from above, we have the effects which Rembrandt selected for his pictures. Within may be found a grove of palms reaching a lofty altitude, a number of rare climbing plants and rarities from Europe, South America, and Central Asia. Externally, we cannot but think the structure would have been more pleasing had the solid walls been carried up but to within six feet of the frieze and the light roof been supported at intervals with Egyptian or other figures.

Another conservatory, externally of unpretentious aspect, is noticeable for the charming artistic style in which it is planned. Passing by the right or left avenue the central grove of palms, we come upon a cave of rocks touched off with mineral colors and with jets of water issuing from crevices that splash and foam about the moss-grown stones in the depths below.

Above and around this open pit-cave rise palm trees. A blue-hued glass roof, interspersed with flakes of white glass to represent fleecy clouds, are visible between their branches, as grateful to the eye as the changeable greens of the trees. Ascending the rocks by winding, age-worn flag steps, on either side surmounted by rustic woodwork, we reach a platform similarly adorned, the sloping sides beyond of this artificial mound veritably clothed with foliage, whilst a bird's-eye view is obtained of the whole area beneath, which is altogether sylvan. From hollow trunks of trees spring out elegant ferns, and the short-cut trunks are at times mounted by choice mosses or vases of flowering plants. The restrictions of space seldom allow such a design to be carried out in a city. Here an orderly or picturesque arrangement is the most that can be aimed at.

For the artificial lighting of these conservatories, lamp shades of opalescent or tinted glass have been introduced, imitative of buds and flowers, but the best method undoubtedly is the obscuring of the vehicle of light by passing the rays through ground glass set at the angles of the walls above or below or constituting a central plaque.

What opportunities does the country not offer for artistic conservatories with the wealth of flower-life that pure air encourages! Flowers and tropical plants receive, like jewelry, a fresh charm from the setting.

Large and small private conservatories are as a rule faulty in construction. The object in the planning of existing conservatories really seems to be to crowd everything against the roof glass. The types of the nurseryman's hot-houses are mostly followed. In most conservatories the sides are brought down at a sharp angle from the apex to within a few feet of the ground, a plan all very well for the treatment of bedding plants but not for a structure resorted to in order to provide scenic pleasure.

For the most part we find little more than angular inclosures suggestive of stooping at every step. With elevated sides groups of flowering plants may be admirably set off by an opaque colored, background, leaving the light to come from above. In fact colors do not appear to best advantage when too completely bathed in light.

The light, too, coming in should be softened by the use of ground crown glass, which may be plain or tinted with cerulean blue according to fancy. For ourselves we cannot but admire a frieze border of mosaic glass, all the better if set off by rondels. With well raised sides, central paths, with trees and flowers to right and left, might be more frequently introduced.

The artistic arrangement of flower groups is an important point. We too frequently find flowers of one species crowded together, instead of a number of different species alternately disposed in geometrical form. There is no charm in mere accumulation, but much in judicious interspersing. A well stocked conservatory is a fine field for color and form practice.

We have never been able to understand why conservatories are almost invariably painted within and without with ghostly white. If white is to be admitted, let it be in company with such bright colors as red and blue; side walls may appropriately present surfaces of rich olive green; bright yellow in daylight would by no means look crude.

Why are pots not more generally abandoned and flowering plants set in tiers of rich loam?